appear, this is a test which in experienced hands affords fair evidence of the origin of the spirit. As regards alcoholic strength it is somewhat low, but the taste is peculiarly smooth and satisfactory. Much has been said about spurious brandy of late, but we have reason to believe that this is a genuine article.

VINCERDA COCA WINE.

(PHILIP CERDA, 10, LEICESTER-PLACE, LEICESTER-SQUARE, W.C.)

The valuable therapeutic principles of the leaf of erythroxylon coca are evidently contained in this agreeable wine, as on suitable treatment cocaine was successfully extracted and identified. Extended analysis gave the following results: Alcohol by weight 13·00 per cent., by volume 16·05 per cent., equal to proof spirit 28·13 per cent.; extractives, 4·99 per cent.; mineral matter, 0·21 per cent. In respect of spirit strength, therefore, it is similar to good port, possesses a similar flavour but is less sweet and not so full-bodied. The valuable coca leaf extractives, in fact, replace to an extent the less valuable sugar of ordinary wine and they communicate an unmistakable flavour to the wine, affording some evidence of the genuineness of the preparation. The value of coca wine as a restorative and stimulant is now recognised, and where indicated the above preparation may be suitably prescribed.

EUCALYPTUS GLOBULUS OIL (PLATYPUS BRAND).

(THE TASMANIAN EUCALYPTUS OIL COMPANY, 138, LEADENHALL-STREET, E.C.)

This preparation was marked, as all similar preparations containing a desirable proportion of eucalyptol are marked, by an especial fragrance of smell. Submitted to fractionation the following results were obtained: At 170° C. 6 per cent. distilled over, between 170° and 172° 28 per cent., between 172° and 175° 18 per cent., between 175° and 177° 19 per cent., between 177° and 178° 3 per cent., between 178° and 180° 11 per cent., and the remaining 15 per cent. came over at points above 180° C. There were traces of water in the oil. Inasmuch as the boiling point of eucalyptol, which is regarded as the valuable active principle of eucalyptus oil, is about 176° C., it will be seen that this brand (the Platypus) is desirably rich in this most important constituent. The specific gravity of the oil at 155° C. was found to be 0 9172. Further examination elicited the admirable purity of the product. Eucalyptus is an excellent, agreeable and effectual antiseptic, and in view of the foregoing results the suitability of this specimen for all purposes where antiseptic treatment is required cannot be disputed.

SODA WATER IN SYPHONS AND A DEVICE TO SECURE ITS GREATER ORGANIC PURITY.

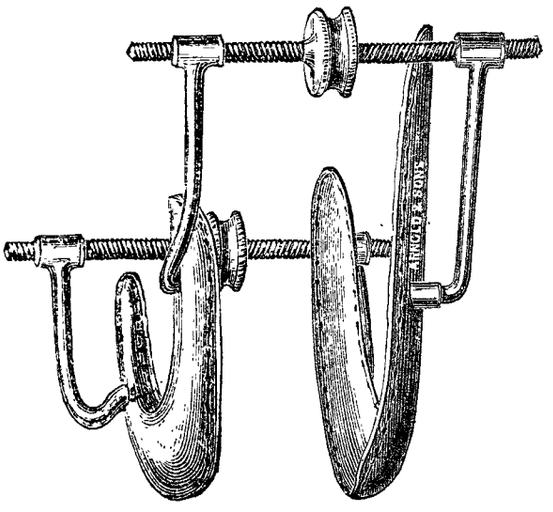
(THE BANGOR CITY MINERAL WATER COMPANY, BANGOR, WALES.)

We have on a previous occasion examined the soda water made by this company, but it is only just to recognise the efforts which they have quite recently made to still further improve the quality of the aerated waters distributed in syphons. Syphons, however carefully filled, will frequently show a considerable deposit of dirt or the water will exhibit a more or less opalescent appearance. This may be due to an accumulation of dust, meal or other objectionable matter in the nozzle of the syphon whilst it has been lying empty. By means of a syphon cleansing jet which this company have invented, a specimen of which we have examined, the interior of the syphon nozzle is thoroughly cleansed before it is attached to the filling machine. The jet, if it is to be used for cleaning the nozzle only, is attached to the ordinary water-supply, but if required also for the rinsing out of the syphon it is attached to the pressure cylinder containing carbonic acid gas. The action is entirely automatic, and twenty dozen syphons, it is stated, may be easily cleansed by means of this device in an hour. We regard this as an important advance in the manufacture of pure aerated water, as we have frequently had occasion to complain of the dirty state of soda water and its consequent organic impurity, doubtless due, not to the water as it flows from the filling apparatus, but to the accumulation of dirt in the nozzle of the syphon. It is scarcely necessary to add that the soda water obtained from syphons so treated was found on examination to be perfectly free from organic matter. Thus the residue, on evaporation, did not show any perceptible discolouration or clearing on ignition, a test which is not responded to satisfactorily by some of the soda water commonly met with. Each syphon (one pint and a half) submitted to us by this company was found to contain 10·5 grains of bicarbonate of soda.

New Invention.

APPARATUS FOR FRACTURES OF THE LOWER JAW.

THE general surgeon, when called upon to treat a case of fracture of the lower jaw, commonly finds that, should a splint be necessary, he has to set aside the ordinary surgical rules for the treatment of fractures elsewhere, because of the special conditions by which this class is attended. In fractures of other bones a splint or the material for the making of one is usually at hand and can readily be applied. The common method of treating fractures of the jaw with four-tailed bandage and gutta-percha may fairly be considered unsatisfactory. To provide an effective and permanent splint for the jaw the general surgeon has often to call upon a dental surgeon for a special apparatus, and thus much valuable time may be lost before the fracture can be set. I am convinced that it is to this delay that most of the troubles incidental to this kind of fracture owe their origin. The saliva, laden with decomposing discharges and débris of food &c., bathes the ends of the bones and the soft tissues surrounding them. This condition is made worse by the constant play of the ends, due to the uncontrolled action of the masticatory muscles and to gravity, leading to abscess, necrosis of the ends and diffuse inflammation of the surrounding soft tissues.



I wish to draw attention to a new form of apparatus which I have devised for fractures of the horizontal portion of the jaw. The following are the chief advantages which may be claimed for it: 1. It can be applied in a few minutes, owing to its being universally adaptable. 2. It can be applied over and over again in different cases without alteration or renewal. 3. Its parts, being of plated metal, are easily kept clean. Bandages need not be used with it. It allows of free application of cleansing washes within the mouth. 4. Its application involves no other parts but the lower jaw. It interferes but little with eating and drinking or speaking and sleeping, because of the swivel action of its clamps. The splint consists of a plated metal horseshoe-shaped piece, which rests upon the table, and a similar one which is applied below the chin. These are fastened together by two movable clamps. To apply the splint, the mouth plate or metal gutter which is to take the teeth, or jaw if there be no teeth, is lined with ordinary splint gutta-percha. This is then warmed and driven down on the teeth and gums as far as the shallow plate allows. The chin plate, lined with the two layers of wash-leather, is put into position and held there. The swivel clamps are then fitted into both plates and, by the thumbscrew to each, can be made to clamp the plates together until the requisite tension is attained. The splint is made by Messrs. Arnold of Smithfield.

March 22nd, 1893. ROBERT C. ACKLAND.

THE LANCET.

LONDON: SATURDAY, APRIL 8, 1893.

WE present our readers to-day with the results of an inquiry which in very special circumstances we have instituted into the water-supply and drainage systems of the city of Chicago. If we had undertaken the examination of such matters in connexion with any town in the United Kingdom the proceeding would have demanded no apology. If we had prosecuted our inquiries in any plague-stricken district abroad there would have been ample precedent; but the present is, it must be confessed, beyond the scope of any similar journalistic enterprise that we are able to quote, and must therefore be justified upon its merits if it is to be justified at all. The reasons that have moved us are very simple and can be stated in a few words. They will, we hope, be found to be cogent enough to prevent any misunderstanding of our motives and even any serious complaint as to the course that we have pursued.

It is perfectly well known both here and in America that the condition of the Chicago River and the state of the Chicago water-supply have been matter of much adverse criticism for some years past, and have given occasion not only for discussion to critics but also from time to time for anxiety to the city authorities. A member of our staff, travelling last autumn in the United States, visited Chicago, and heard both there and elsewhere much discussion and no little censure of the sanitation of the city. Struck with the gravity of the situation which would arise if the thousands of visitors to the World's Fair should find themselves restricted to an unwholesome water-supply, in a year which is only too likely to witness a recrudescence of the cholera outbreak of 1892, he prosecuted such inquiries as a brief opportunity enabled him to make upon the spot, and took advantage of a private introduction to secure the services of an agent resident in the city who could follow up his inquiries if it were desired to pursue the inquiry further after his own return to this country. He was thus, when he arrived at home, in a position to report to us not only the current rumour as to the dangers lurking in the Chicago River and Lake Michigan, but also to give from authoritative sources an outline sketch of the systems of drainage and water-supply which are in fuller detail laid before our readers to-day, and thus to show that the talk of the streets had at least that colour of probability which is afforded by indisputable theoretical shortcomings in the design of the city sewers and the city waterworks. There was thus presented to us as the Editors of THE LANCET a duty which we were bound to undertake. So long as the sanitation of Chicago was a matter of purely domestic concern to the Chicago people, it was beyond our province, but when it had plainly become a matter of possibly life and death significance to thousands of our fellow-countrymen, who are proposing to accept the invitation of the American people and visit Chicago during the present year, we felt that the time had arrived, not for searching out precedents, but for making a new departure and setting at rest the disquieting questions that had been so pressingly forced upon our notice. We accordingly commissioned the gentleman who had made the preliminary inquiries to complete the task which he had undertaken, and charged him to spare neither trouble nor expense to make the inquiry thorough and to obtain such information as would enable us and our chemical advisers to submit to our readers a complete and trustworthy account of the matters brought into question and such advice as the circumstances of the case might demand.

So much it has seemed necessary to say upon the threshold of the present discussion, not only in our own justification, but also by way of explaining and defining the limits which we have imposed upon ourselves in dealing with the questions raised. The matters treated of are matters of capital importance to the people of Chicago, and there is much which, if we were free to treat of them under that point of view, it would be fitting and even necessary to say, but which has in the existing circumstances been left unsaid. Our object has been the practical one of ascertaining as far as possible what risks, if any, are involved in the visit of our fellow-countrymen to Chicago and of contributing to the success of the Exhibition by such counsels as may enable visitors and their entertainers alike to be upon their guard against such dangers as may be avoided or minimised by vigilance and well directed observance of the laws of health. It will be found upon reference to the report of our Commissioners that there are some points, and especially the unscientific use of ice in cooling water, to which the attention of the public in Chicago needs to be most carefully and seriously directed. These will, we hope, receive the consideration to which they are entitled on the part of all concerned. But it is also pleasant and not at all surprising to find that defects have been magnified and faults exaggerated by ill-informed rumour, and that it may reasonably be hoped that the great enterprise of the International Exhibition will be carried through without any such untoward concomitant as an outbreak of epidemic disease. That it may be so is the sincere wish of all parties on both sides of the Atlantic. We are the better able to express the sentiment because we can indulge the hope that our well-intended criticisms may not be without some effect in helping to secure this great result.

THE experiment in "the life of a free people" initiated many years ago by Leicester is being put to the test. The particular freedom in question is the freedom to suffer from small-pox. The experiment is interesting to the public, but it is not so highly so as some of the sanitary leaders are apt to think, save to the people of Leicester themselves. Still it has a certain human interest, and deserves to be watched with attention by all intelligent students of human nature, and especially by students of human folly. Two contributions to the study of great value have appeared lately in our columns: one, a letter from Dr. PRIESTLEY,[1] the medical officer of health for Leicester itself; the other[2] a paper entitled "A Critical Examination of the so-called 'Leicester System' of Isolation and Quarantine," by Mr. A. T. BREMNER, L.R.C.P.Edin., member of the Leicester Fever Hospital Com-

[1] THE LANCET, March 18th, 1893.
[2] THE LANCET, March 25th, 1893.